

Original Research Paper

Medicine

Referral of patients with chest symptoms from adult out-patient department to designated microscopy centre in a medical college hospital of Kolkata

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Background : Referral for r was conducted to assess th 100 chest symptomatic w auditing were data collectic age of the patients was 41.	nicroscopy plays a crucial role in case identification for pulmonary tuberculosis. Objectives: The study ne proportion of referral to designated microscopy centre. Methods: A cross-sectional study among illing patients attending adult medical outdoor department was done. Interview and prescription on method to assess referral. Statistical analysis was done through Epi-Info program. Results: Mean 21 years. Co-morbidity (16%) & history of contact (6%) was evaluated. Only cough. both cough and

chest pains were the predominant symptoms among 39 percent, 51 percent of patients respectively. Significant amount of patients (73.58%) had no idea for duration of chest pain. Associated symptoms were low grade fever (60%), weight loss (13%). Time-interval for care-seeking was found by < 4 weeks (41%), > 4 weeks (19%), at 8 weeks (21%) and at 1st day (19%). Chest symptomatics were referred to Designated Microscopy Centre (11%) in significantly lower than referred to chest department (92%). Conclusion: The chest symptomatics were not referred to DMC at the proposed level. A sizable number of patients (21%) attended hospital for health care services after a long interval (8 weeks). **Implications:** Sensitization of doctors on the program protocol is required to overcome the poor situation of referral to Designated Microscopy Centre.

KEYWORDS

Adult general OPD, Designated Microscopy Centre (DMC), Pulmonary Tuberculosis (PTB)

Introduction:

Tuberculosis (TB) is an important public health problem worldwide. It has been estimated that in the world, one patient is newly infected with TB in every second; nearly 1 percent of the world population is infected every year and overall, one third of the world population is infected with Mycobacterium tuberculosis.1 The World Health Organization (WHO) and India's Revised National Tuberculosis Control Program (RNTCP) recommended periodic sputum smear microscopy during the course of TB treatment to monitor the progress of individual patient and assess overall program performance.² Tuberculosis (TB) still exists in India as a significant public health problem. About 1.8 million new cases of tuberculosis occur every year, with about half of them being infectious cases of sputum smear positive pulmonary TB (PTB). Total populations suffering from active disease in India are 14 million of which 3 to 3.5 millions are sputum positive (20% to 25% of the total). About one million sputum positive cases are added every year. ⁴ Revised National Tuberculosis Control Program (RNTCP) is the internationally recommended strategy, to ensure cure of tuberculosis; it has become the standard for the diagnosis, treatment and monitoring of tuberculosis worldwide and has been implemented in 187 out of 211 countries, covering more than 89% of world's population. ⁵ Under Revised National Tuberculosis Control Program, priority is given to detection and treatment of sputum smear positive cases, which are responsible for majority of transmission of infection in the community. Sputum microscopy services are thus provided at the Designated Microscopy Centres (DMCs) having adequate out-patient attendance, trained microscopist and facilities for sputum microscopy. Each DMC caters to a population of approximately one lakh residing in about 50 - 100 villages in India.⁶ The commonest symptom of Pulmonary Tuberculosis (PTB) is cough. 2 to 3 percent of new patients in adult out-patient department (OPD) are suspected TB cases (cough ≥ 2 weeks, chest pain and or haemoptysis). National guidelines recommend that all the chest symptomatic patients are to be referred to DMC for diagnosis of PTB.

However, percentage (%) of referred patient is not known in India as studies are scanty. The tuberculosis patients will be diagnosed less in number if the patients are not referred to DMC and accordingly the problems will not be reduced to the extent of expectation. So, the patients with chest symptoms must be identified at OPD and referred to DMC. Several factors may contribute to the referral for sputum testing and these may be due to access and quality of care as well as availability of DMC. The access and quality care may be dependent on physicians' practice variations within a setting as well as practice variations across settings. Patient factors that contribute to healthcare are knowledge, attitudes and behaviors. The qualitative improvement of the program is dependent on large number of local and remote factors. If the attending patients are properly detected for PTB, then treatment can be provided to all of them. Thus program success depends upon detection of PTB. With this background keeping in mind this study has been conducted to estimate the proportion of referral of patients with chest symptom(s) to DMC for sputum testing, to find out the variation of referral singly or in combination of symptoms and to assess the proportion of patients with chest symptom(s) in the adult OPD of this health care setting.

Materials and method:

Study place & period: The study was conducted at College of Medicine & Sagore Dutta Hospital, Kolkata, West Bengal, India during September 2014 to August 2015. **Type of study:** The study was prospective cohort study. Study tools: Data collectors were trained using manual of procedures. They were certified on procedures. They screened clinical notes of each OPD patient at end of clinic visit (5 days per week, 4 weeks, alternating over 8 weeks). **Study Population:** All chest symptomatic patients attended in adult medical OPD were included in the study population. **Inclusion criteria:** All adult patients aged \geq 15 years, patients attended in adult medical OPD and all new patient with clinic note which includes any or combination of the followings: cough \geq 2 weeks, chest pain, or haemoptysis were included in this study. **Exclusion criteria:** Patients who refused to take part in the

study were excluded. Sample Size: The OPD patients were screened in the following way. The number of OPD patients was seen near about 250 patients per day for 20 days or 1500 patients per week over 8 weeks. Among them 2% (100 patients) of patients would have been seen with chest symptom(s) which was included in this study. Proportions of referral of patients with chest symptom(s) were 84 to 96% if the patients were screened 90% in adult medical OPD within 95% confidence interval. Sampling design: It was census population with chest symptoms. Variables: a) Primary outcome variable: The referral rate of patients with chest symptom(s) (TB suspects) to DMC (yes vs. no) was based on review of clinical note ("prescription"). b) Secondary outcome variables: The prevalence of patients with chest symptom(s) was the percentage of OPD patients. The pattern of chest symptom(s) was either cough ≥ 2 weeks only, chest pain only, hemoptysis only or combination (2 or more). Ethical issue: Institutional Ethics Committee of CMSDH had been approached for the approval of this study. After getting approval, this study was conducted.

Statistical analysis:

Statistical analysis was done by Epi-info software. Proportion, tabular presentation, chi-square (χ^2) test and P value of < 0.05 were considered significant.

Results:

Socio-demographic profile of the patients:

In this study, male population was 54 percent and 48 percent of patients were 27-52 years old. Mean age of the sample population was 41.2 ± 16.4 years with the range from 15 to 90 years. Hindu patients were 58 percent and these patients were mostly from urban society (93%).

Medical issue:

Two percent of all OPD patients were found with chest symptoms seemed to be fit for referral to DMC. Highest percentage (81%) of these patients were found referred to chest OPD, not to DMC. Co-morbidities were type 2 diabetes mellitus (T2DM), hypertension (HTN), vertigo, headache, dyspnoea etc. Associated symptoms (fever, wt loss etc) were also found among these patients. Most of the co-morbid patients were 27-52 years old (Table 1).

Socio-medical issue:

Care seeking behaviour of the patients was found that a good number of patients (41%) came for medical care after a long time of appearance of symptoms suggestive of tuberculosis (Table 2). The care seeking interval was statistacally significant. (Chi-Square = 64.19, df = 18, p < 0.05) The patients were not referred to the DMC as per national guidelines. This referral was less in number or proportion. History of contact with TB patients was found with 6 percent of patients (Table 3). Proportion of referral of patients with chest symptom(s) to DMC for sputum testing was only 11%. Most of the patients were found with cough and other symptoms in combination (Table 4). The referral of the patient was not statistically significant according to chest symptoms [Chi-Square = 8.009, df = 12, significance (two sided) = 0.784]. Referral frequency didn't vary according to pattern of chest symptoms (single symptom or combination of symptoms). The site of referral was seen to chest OPD (Out-Patient Department) in majority of number (Table 4). Fever was most commonly associated symptom (51%) (Table 5). The referral of chest symptoms was not statistically significant with associated other symptoms. (Chi-Square = 7.044, df = 9, p > 0.05).

Discussion:

In the present study, the percentage of referrals of patients with chest symptom(s) from new adult OPD attendance was found 2 percent which was corroborative to the expected RNTCP norms of at least 2 percent.^{7,8,9} Ahmed J et al, 2009 showed that about 1.1 percent of the total adult out-patients under Sidiginamola DMC were found to be persons with pulmonary symptoms (PPS). ¹⁰Bisoi S et al, 2007 found 1.8 percent of new adult OPD patients were

chest symptomatic and 11.5 percent were sputum positive among chest symptomatic. ¹¹

Cough in combination with other symptoms was found the commonest symptoms in this study. This was higher than some study conducted abroad. $^{\rm 12}$

Diabetes, hypertension with some non-specific symptoms were found as co-morbidities in this study. These findings can be compared with a study which said that diabetes, smoking, malnutrition and chronic lung disease were found as comorbid non communicable disease risk factors.¹³

A good number of patients (40%) attended hospital after 8 weeks or long duration of appearance of tuberculosis symptoms. On the contrary, an Ethiopian study described that the median delay was 30 days before the first action on the patient. ¹⁴ One American study has given the similar figure in respect of delay of attendance to the health care facility. The median delay from onset of symptom to seeking diagnostic testing was 61 days (inter-quartile range 30–91 days). ¹⁵ In this study, the care seeking interval was more than 4 weeks but Gothankar JS et al showed the care seeking interval was more than 2 weeks.¹⁶

Proportion of referral of patients with chest symptom(s) to DMC for sputum testing was poor in this study. In one of Indian studies, the TB suspects were identified and they all were referred to DMCs with some drop out. ¹⁷ Reason of this lowered referral to DMC was not explored in this study. Most of the patients were referred to Chest department.

History of contact with TB patients was found with low number of suspected TB patients in this present study. In some other study, nearly one-fifth of the contacts (18.9%) had shown the positive result during screening. ¹⁸ Explanation of low contact history might be of importance because no patient declared his status that he was a patient. Many infectious patients are mobile, doing job outside and spreading the disease agent to susceptible population.

Conclusion: Study knowledge can help our health administrators, health care providers, health educators to adopt newer techniques or policies to overcome the problem found here in respect of referral. Results of study helped us to define need for assessing physician awareness, agreement and ability as barriers to referral to DMC. Referral of TB suspects (present day term presumptive TB) should be to the DMC of the health care facilities instead of Chest OPD. It may overcome the delay of the service availability or loss of the patient.

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Age	Co-Morbidity Pattern												
	Back ache	Breathle	DMT2	Dyse atery	Dyspa cea	Heada che	HIN	Lipo ma	Nor mal	Psycho logical proble m	Typ hoid	Vert igo	Total
Lowest through 26	0	0	1	0	0	0	0	0	22	1	1	2	26
highest through 52	0	1	0	0	0	0	2	0	22	0	0	0	26
27-51 range	1	0	3	1	1	1	0	1	40	0	0	0	48
Total	1	1	4	1	1	1	2	1	84	1	1	2	100

Table 1: Frequency distribution of patients according to age and Gender

Table 2: Distribution of patients according to Care Seeking Interval and Referral

Care Seeking Interval (Gap	Refe	Total	
between appearance of TB symptoms and visit to Doctors)	N/Chest	Y/Chest	
< 4 wks	56	4	41
> 4 wks	13	5	18
> 8 Wks	18	4	22
Total	87	11	100

x² = 6.126, df = 2, p = 0.0468 (N/Chest = Not referred to DMC but referred to Chest OPD, Y/Chest = Referred to DMC and Chest OPD)

Table 3: Frequency distribution of patients according to contact history for tuberculosis

History for tuberculosis	Frequency	Percent	Valid Percent	Cumulative Percent
No	94	94.0	94.0	94.0
Yes	6	6.0	6.0	100.0

Table 4: Distribution of patients according to chest symptom and referral

	Referral					
Type of Chest Symptom(s)	Ν	N/Chest	Y	Y/Chest	Total	
Cough	1	35	0	3	39	
Cough/Chest Pain	4	38	2	6	50	
Cough/Chest Pain/Hemoptysis	0	1	0	1	2	
Chest Pain	1	6	0	1	8	
Hemoptysis	0	1	0	0	1	
Total	6	81	2	11	100	

(N = Not referred to anywhere, N/Chest = Not referred to DMC but referred to Chest OPD, Y = Referred to DMC, Y/Chest = Referred to DMC and Chest OPD)

Table 5: Distribution of patients according to Other Symptom and Referral

		Referral					
Other Symptom		N	N/Chest	Y	Y/Chest	Total	
	Fever	2	43	2	4	51	
	Fever, Loss of weight	0	6	0	2	8	
	Loss of weight	0	- 4	0	1	5	
	No symptom	4	28	0	4	36	
Total		6	81	2	11	100	

 $\chi^2 = 7.044$, df = 9, p > 0.05

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